Product parameters

Motor model	MD520Z19_12V	MD520Z30_12V	MD520Z56_12V
Rated motor voltage	12V		
Motor type	Permanent magnet brush		
Output shaft	Diameter 6mm D-type eccentric shaft		
Stall torque	3.1kg·cm	4.8kg·cm	8.3kg·cm
Rated torque	2.2kg·cm	3.3kg·cm	6.5kg·cm
Speed before deceleration	11000rpm	11000rpm	12000rpm
Speed after deceleration	550±10rpm	333±10rpm	205±10rpm
Power rating	≤4W	≤4W	≤4W
Stall current	3A	3A	4A
Rated current	0.3A	0.3A	0.3A
Gear reduction ratio	1:19	1:30	1:56
Encoder type	AB phase incremental Hall encoder		
Encoder supply voltage	3.3-5V		
Number of magnetic loops	11		
Interface type	PH2.0 6Pin		
Function	With its own pull-up shaping, the single-chip microcomputer can directly read the signal pulse		
Single motor weight	150g±1g	150g±1g	150g±1g

Note: The recommended power supply range for a motor with a rated voltage of 12V is between 11V and 16V, and 12V is recommended.
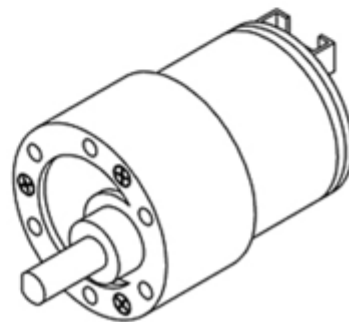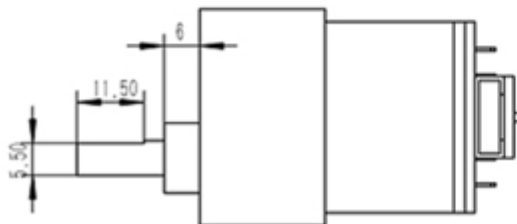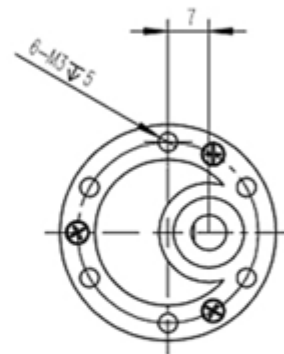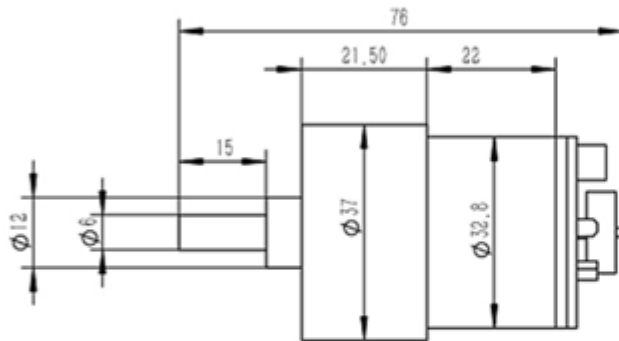
Wiring Instructions

1: Motor power cable+
2: Motor power cable -
3: The sensor signal is negative
4: The sensor signal is positive 5V
5: Sensor signal line B phase
6: Sensor signal line A phase

1 2 3 4 5 6

Product size

Motor output shaft: 6mm diameter D-shaft

Unit: mm

76

21.50

22

15

Ø 12

Ø 6

Ø 37

Ø 32.8

7

6—M3 ▽ 5

6

11.50

5.50

Encoder output description

The phase difference between the two signals is 100 degrees, and the rotation direction of the motor can be judged according to the sequence of the two signals. The current tire walking distance can be calculated according to the number of signal pulses per unit time and the tire circumference. If only the number of AB-phase pulses per unit time is detected, the speed and slowness of the current motor speed can also be measured.

Take a motor with a reduction ratio of 1:30 as an example, the single-phase output of 11 pulses when the motor rotates one circle, and with a reduction ratio of 1:30, the maximum output of the output shaft of the motor rotates one circle (30*11*4=) 1320 counts. The phase difference of AB two-phase output pulse signal is 100 degrees, which can detect the rotation direction of the motor.
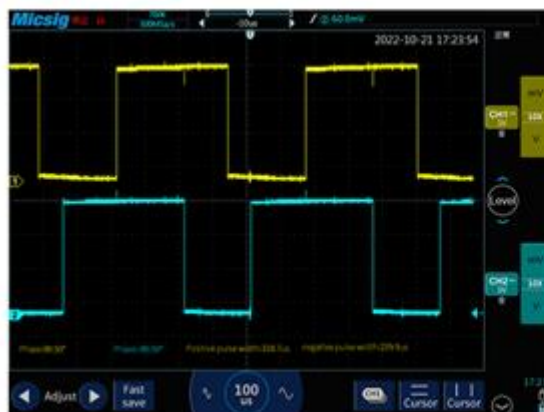
Forward rotation
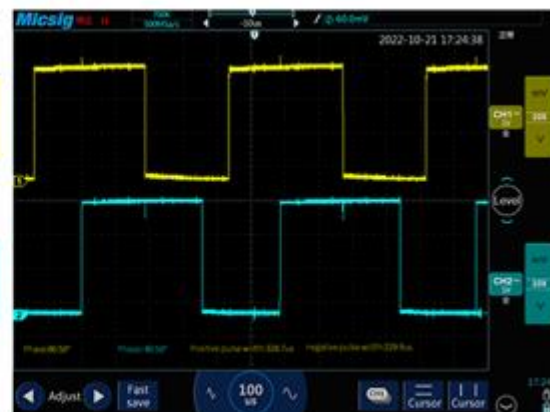
Reverse rotation

Encoder parameters					
Model number	Number of encoder lines	Type	Power supply	Encoder Protection	Adapt to the microcontroller
Hall encoder	11ppr	Magnetic induction	3.3~5V	Bare (magnetic encoder is relatively stable, no need for back cover)	Almost all micro-controllers